

# **Atop ABLELink® Single Port Serial Server GW51E-MINI**

## **User Manual**



Version 1.0

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## 1. Introduction

Atop GW51E-MINI Single Port Serial Server is a gateway between Ethernet (TCP/IP) and RS-232 communications. It allows almost any serial device to be connected to a new or existing Ethernet network. The information transmitted by GW51E-MINI is transparent to both host computers (Ethernet) and devices (RS-232). Data coming from the Ethernet (TCP/IP) is sent to the designated RS-232 port and data being received from RS-232 port is sent to the Ethernet (TCP/IP) transparently.

In the computer integration manufacturing or industrial automation area, the Atop GW51E-MINI Single Port Serial Server is used for field devices to direct connect to Ethernet network. Terminal Server (main control program run in GW51E-MINI) transforms whatever data received from RS-232 to TCP port then connects devices to the Ethernet network via a single application program or multiple application programs.

Many control devices provide the ability to communicate with hosts through RS-232, however, RS-232 serial communication has its limitations. For one, it is hard to transfer data through a long distance. With Atop GW51E-MINI, it is possible to communicate with a remote device in the Intranet environment or even in the Internet and thus, increases the communication distance dramatically.

Flexible configuration options enable this unit to be setup remotely over Ethernet web browser, or Windows utility.

### 1.1 Packaging

Atop Ethernet-Serial Server x 1

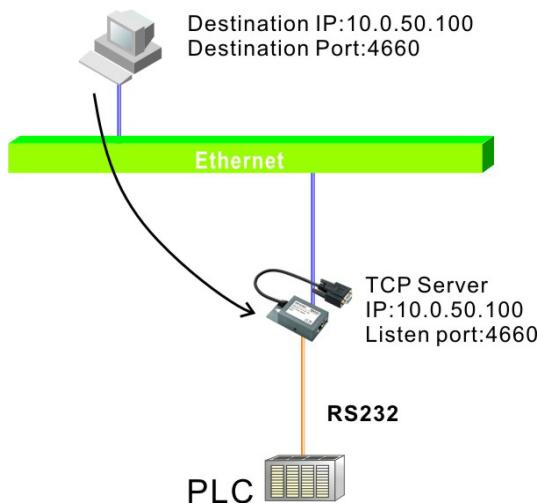
Atop Ethernet-Serial Server quick start guide x 1

Power adapter AC 100-240 to DC 5V x 1

Product CD containing configuration utility and sample programs x 1

## 1.2 Application Connectivity

GW51E-MINI supports two connection modes, i.e. TCP server mode and Virtual Com server mode. Each link mode is fit to deferent applications.



## 2. Hardware Installation

- Plug in DC 5V 200mA, and the RUN LED will blink if GW51E-MINI functions normally.
- Prepare necessary cables, hub, power cord and RS-232 connector.
- Connect a serial device to a serial port of GW51E-MINI, make sure the right connection of RS-232.
- Use **monitor.exe** configuration utility in the product CD or diskette to diagnose GW51E-MINI. If it starts up successfully, you are able to find the IP and MAC addresses of GW51E-MINI. You can change the network parameters of GW51E-MINI to join your LAN by changing its IP address, gateway IP address and subnet mask.

## 3. Software Configuration

### 3.1 Default Settings

Atop GW51E-MINI Single Port Serial Server is shipped with default settings shown in the Following table:

Property	Default Value
IP Address	10.0.50.100
Gateway	10.0.0.254
Subnet Mask	255.255.0.0
User Name	Admin
Password	Null
COM 1	9600,None,8,1,No flow control, buffer disabled, packet delimiter timer 2ms
Link 1	Type: TCP Server, Listen port 4660, Filter=0.0.0.0, Virtual COM disabled

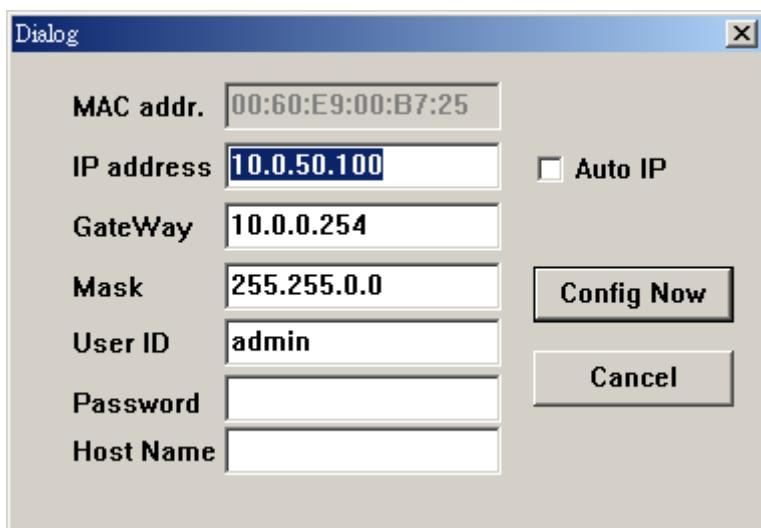
**NOTE:** Atop provides a default button to restore system settings including IP address, gateway IP address and subnet mask etc. to the defaults. Press and hold the default button for 5 seconds till the server reboots.

### 3.2 TCP/IP Port Number

Port number 4660 is default of GW51E-MINI and is associated with serial port COM1. After your application program connects to the TCP port 4660 of GW51E-MINI, data being sent to this TCP connection from your application program are transparent to the COM1 of GW51E-MINI. Vice versa is also true.

### 3.3 Configuration set by monitor.exe utility

Use **monitor.exe** that comes with the product CD or diskette to configure the network parameters of GW51E-MINI. As you can see from the following picture, you can change IP address, gateway IP address, subnet mask, user ID and password of GW51E-MINI from the utility. For more details of the utility please refer to Appendix-C Configuration Utility.



### 3.4 Configuration set by web browser

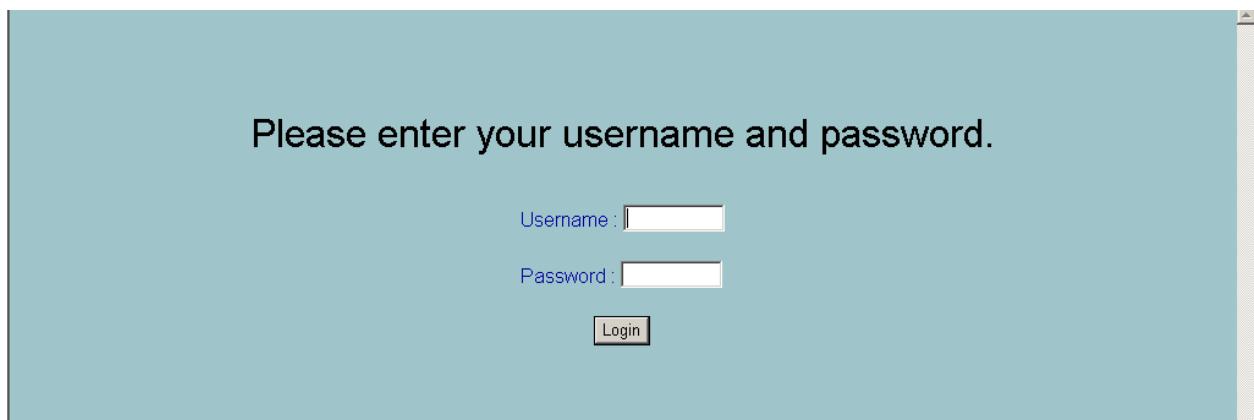
It is also possible to modify various settings through the web server interface. To do so, please follow the steps below.

#### Log in to the system

1. From web browser, type in the IP address of GW51E-MINI in the URL.

**Example: http://10.0.50.100**

2. The following authentication screen appears. Please type in user name and password then click on OK.  
The user name is **admin** and password is **null** by default.



3. The following overview page appears.

**ABLELink Ethernet-Serial Server**

**Overview**

The general device information of Ethernet-Serial Server.

<b>Model Name</b>	GW51E-MINI
<b>IP Address</b>	10.0.50.100
<b>MAC Address</b>	00:60:E9:00:B4:7C
<b>Kernel Version</b>	V1.15
<b>AP Version</b>	TerminalSrv ver1.01b
<b>Link Status</b>	S

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### Networking setup

Click on the "Networking" link and the following screen appears.

**ABLELink Ethernet-Serial Server**

**TCP/IP**

To configure network settings of Ethernet-Serial Server. After saving configuration you have to restart the device to make the settings effective.

<b>IP Address</b>	10	.	0	.	50	.	100
<b>Default Gateway</b>	10	.	0	.	0	.	254
<b>Subnet Mask</b>	255	.	255	.	0	.	0

**Save Configuration** **Restart**

This page indicates the default static IP address, gateway IP address, subnet mask information of GW51E-MINI. Please note that any setting change made on this page will not take effect until you restart device.

## Change the password

1. Click on the “Security” link and the following screen appears.



The default password is null, you can change the password by filling in the new password to New Password and Verified Password fields, be aware that password is case sensitive.

Old Password	*****
New Password	*****
Verified Password	*****

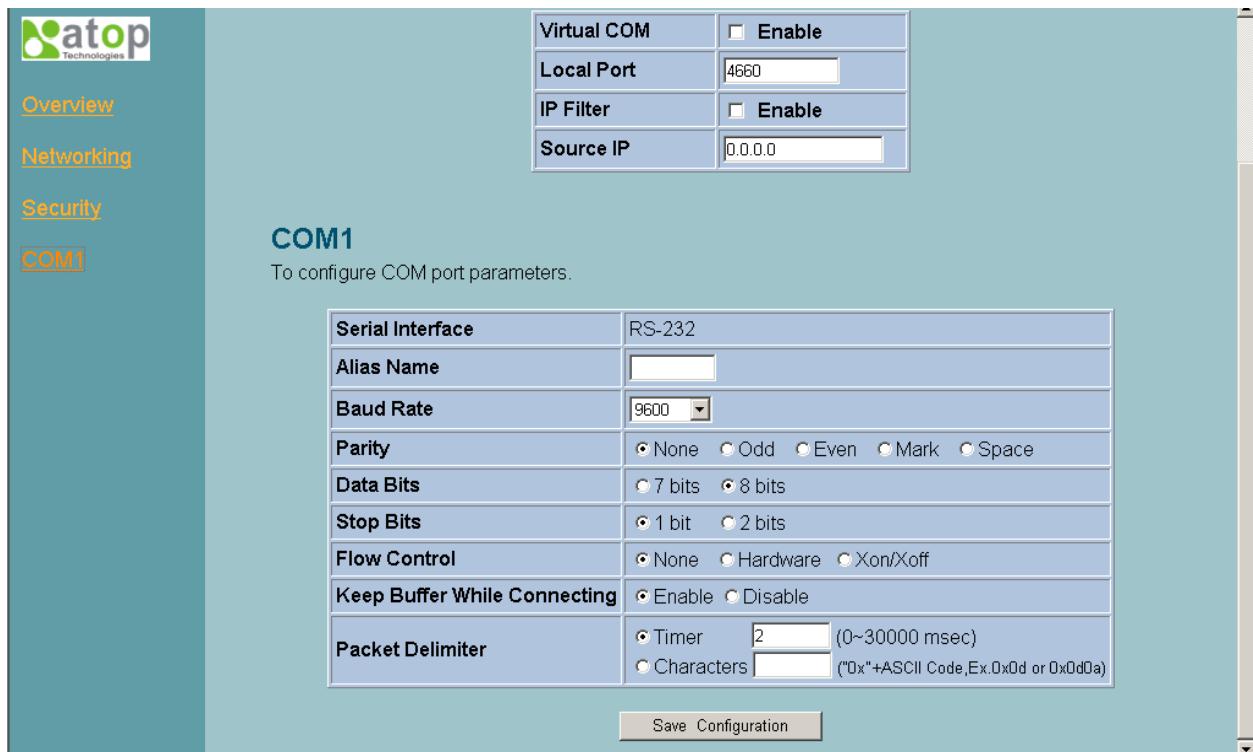
Save Configuration

2. Please input the old password in the “Old Password” field, input the new password in the “New Password” and the “Verified Password” fields. Then click on “Save Configuration” to update the password.

**Note:** You can press the default button of product to reset password to the default value.

## COM1 Setup

Click on the “COM1” link and the following screen appears. Fill in COM1 parameter information under COM1 field then click on “Save Configuration” button to save the changes.



Virtual COM	<input checked="" type="checkbox"/> Enable
Local Port	4660
IP Filter	<input checked="" type="checkbox"/> Enable
Source IP	0.0.0.0

**COM1**  
To configure COM port parameters.

Serial Interface	RS-232
Alias Name	
Baud Rate	9600
Parity	<input checked="" type="radio"/> None <input type="radio"/> Odd <input type="radio"/> Even <input type="radio"/> Mark <input type="radio"/> Space
Data Bits	<input checked="" type="radio"/> 7 bits <input type="radio"/> 8 bits
Stop Bits	<input checked="" type="radio"/> 1 bit <input type="radio"/> 2 bits
Flow Control	<input checked="" type="radio"/> None <input type="radio"/> Hardware <input type="radio"/> Xon/Xoff
Keep Buffer While Connecting	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Packet Delimiter	<input checked="" type="radio"/> Timer 2 (0~30000 msec) <input type="radio"/> Characters 0x0d0a (0x" + ASCII Code, Ex.0x0d or 0x0d0a)

Save Configuration

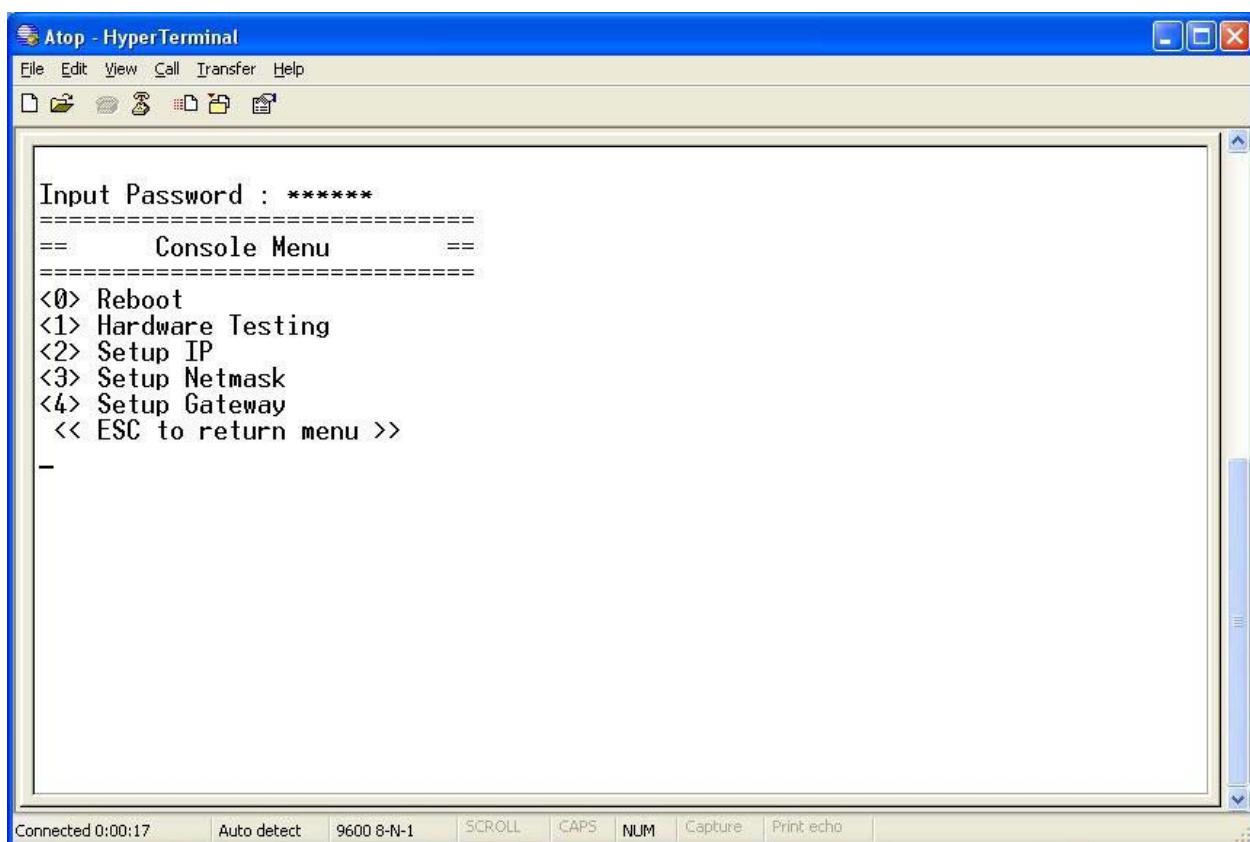
### 3.5 Configuration set by Hyper Terminal console utility

1. Power off GW51E-MINI.
2. Set the switch from 'NORMAL' to 'CONSOLE'.
3. Use a PC to connect to GW51E-MINI RS-232 port
4. Power on GW51E-MINI.
5. Open a Hyper Terminal program from your computer Start menu -> Programs -> Accessories -> Communication -> Hyper Terminal, set COM2 parameters as follows.
  - Baud rate: 9600 bps
  - Data bit: 8 bits
  - Parity: None
  - Stop bit: 1bit
  - Flow control: None

**Note:**

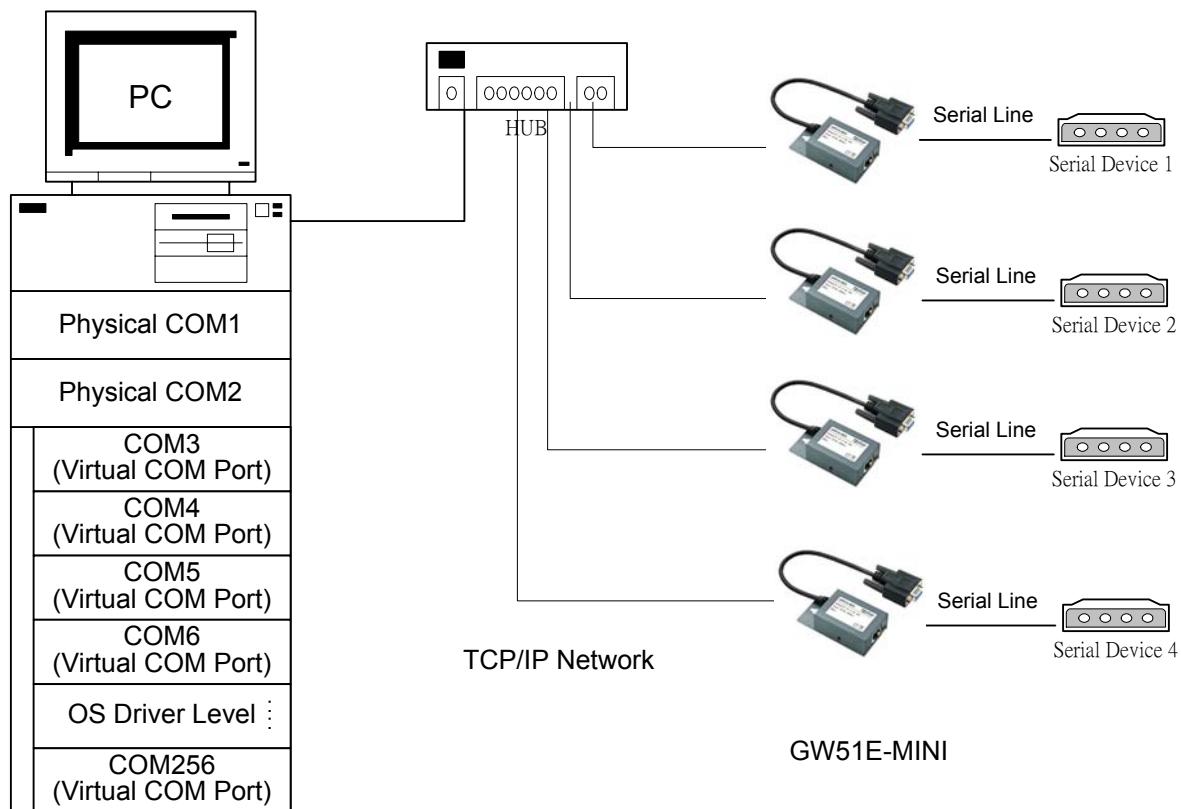
At present time baud rate is fixed at **9600 bps** for console port communication, RS-232C parameters of your computer COM port and GW51E-MINI must be the same.

6. Once Hyper Terminal is connected, type in username and password then the following Hyper Terminal window appears. The default username and password are 'atop03' and 'admin800'.



### 3.6 Virtual COM Mode

Virtual COM driver mode for windows converts COM data to LAN data to control the RS-232 port on a GW51E-MINI via the LAN. By creating virtual COM ports on the PC, Atop Virtual COM redirects the communications from the virtual COM ports to an IP address and port number on a GW51E-MINI that connects the serial line device to the network. The following figure is Atop Virtual COM connection diagram.



#### 3.6.1 Setup of a virtual COM driver

##### Correspondence OS

Atop Virtual COM driver can be used on Windows XP, Windows 2000, Windows NT 4.0 SP5 or later, Windows Me or Windows 98, Microsoft NT/2000 Terminal Server.

##### Installation

Make sure you have turned off all anti-virus software before beginning the installation. Run AtopVcom.exe program included in the CD to install Atop Virtual COM for your operating system.

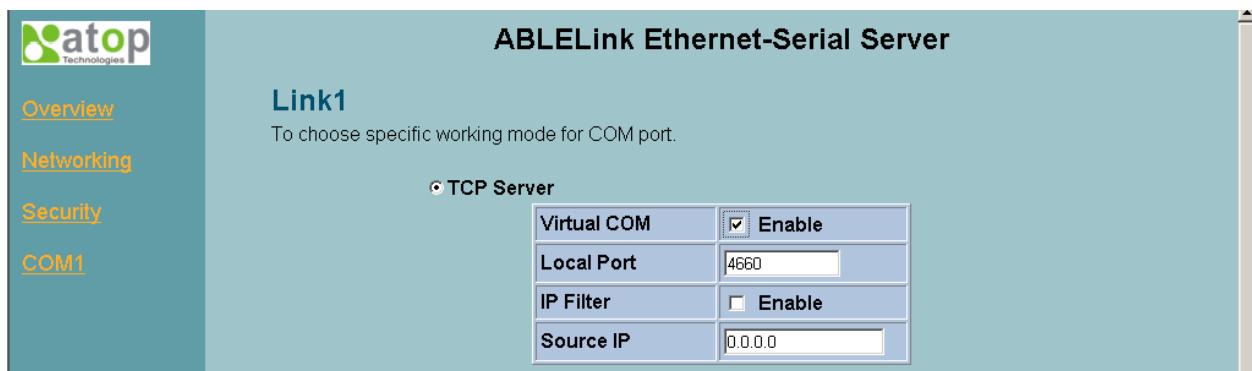
##### Uninstalling

1. From Windows Start menu select Setting, Control Panel, Add/Remove Programs.
2. Select **Serial IP for ATOP** in the list of installed software.
3. Click the **Add/Remove** button to remove the program, or from Windows start menu select programs, Serial IP for ATOP, **Uninstall Serial IP for ATOP** to remove the program.

### 3.6.2 Virtual COM communication

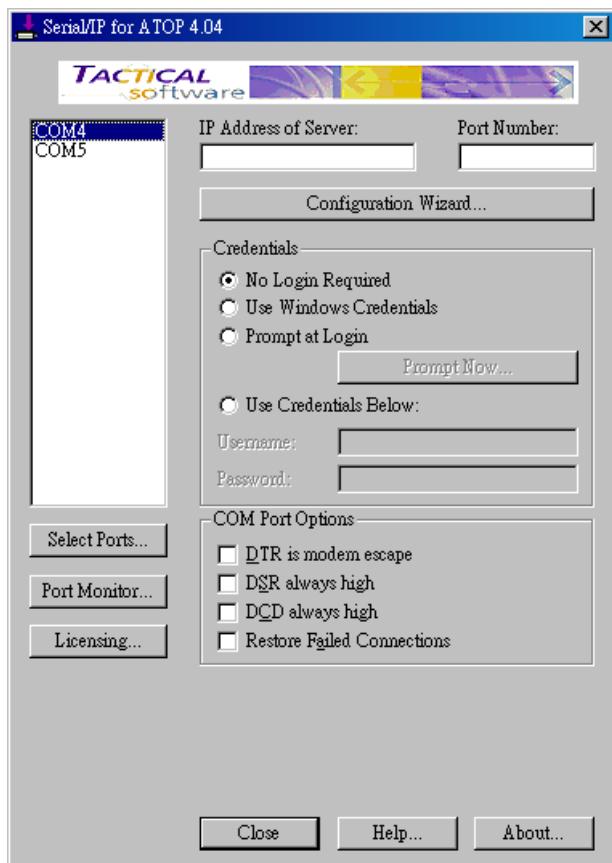
#### 3.6.2.1 Enable virtual COM on GW51E-MINI

From web browser access to GW51E-MINI by typing its IP address, click on COM1 link to access COM page, on the top half of the page click on “TCP Server” and enable virtual COM by putting a check in front of the “Enable” button, then type in the local port number in the “Local Port” field as indicated in the following figure:



#### 3.6.2.2 Run Serial/IP for ATOP program on monitoring PC

In the Window Start Menu, select the Serial/IP for ATOP program group and select **Serial/IP for ATOP Configuration**. The configuration window is shown as following:



At right is a sample Virtual COM Control Panel window. At the left is the list of the COM ports that you have selected (in the Select Ports window) for use by the Virtual COM Redirector. If you wish to change ports appeared in this list, use the **Select Ports** button.

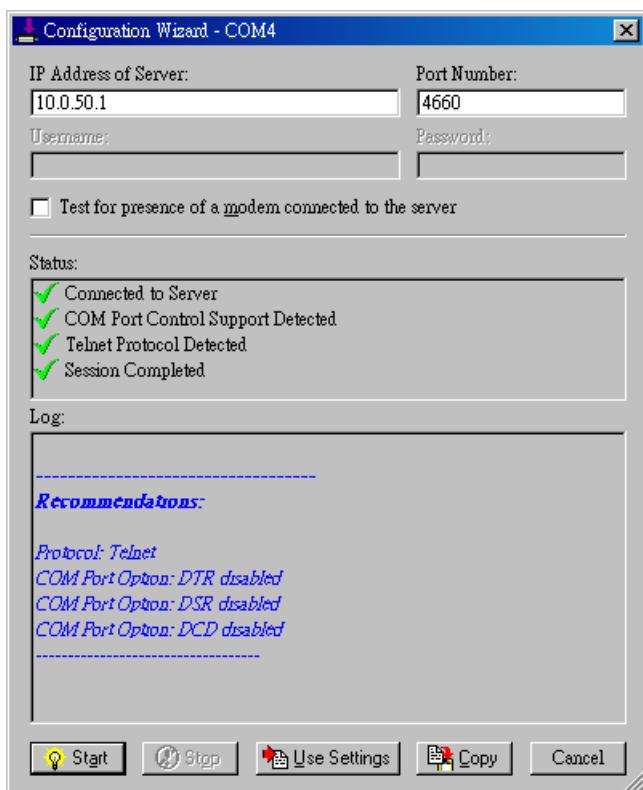
Each COM port has its own settings. When you click on a COM port, the Control Panel display changes to reflect the settings for that COM port.

**Note:** When you change settings for a COM port, the changes are effective immediately. There is no separate confirmation dialog to confirm or cancel your changes.

### Configuring Virtual COM Ports

You configure each Serial/IP COM port as follows:

1. Select a COM port in the list.
2. For **IP Address of Server**, enter a numeric IP address for the serial server.
3. For **Port Number**, enter the TCP port number that the serial server uses to provide its serial ports to the network.
4. For **Server Credentials**, the default is **No Login Required**. If your serial server does require a login by the Virtual COM Redirector, the Virtual COM Redirector needs to provide a username and/or password every time an application tries to use the serial server.
5. Click the **Configuration Wizard** button and then click the **Start** button that appears in the wizard window. This important step verifies that the Virtual COM Redirector can communicate with the serial server using the settings you have provided. If the **Log** display does not show errors, click the **Use Settings** button in the wizard, which makes the recommended settings effective and returns you to the Control Panel to continue with the following steps.



6. For Connection Protocol, the setting must match the TCP/IP protocol that the serial server supports. The Configuration Wizard is usually able to determine the correct setting.

For COM Port Options, the settings must match the COM port behavior expected by the PC application that will use this COM port. The Configuration Wizard will recommend a combination of settings.

## 4. Start Writing Your Own Applications

Before you start writing your host applications or programs to interact with GW51E-MINI, please make sure you have done the following.

### 4.1 Preparing The System

1. Properly connect GW51E-MINI hardware including power, Ethernet and RS-232 cables.
2. Properly configure the parameters of GW51E-MINI including connection type, IP address, gateway IP address, and network mask accordingly (see chapter 2 **Hardware Installation** section).
3. Configure GW51E-MINI as TCP Server using default TCP port number 4660.
4. The host (PC) application program must be configured as a TCP client and connects to GW51E-MINI with designated TCP port number 4660 for COM1.
5. Make sure GW51E-MINI is running by checking the running status through **monitor.exe** configuration utility.

## 4.2 Running The Sample Program

Sample programs written in VB and VC++ included in package are provided for your reference, source codes are also included. Test program can be found in the product CD or diskette under the directory of **\sample\vb\_ap\** and **\sample\vc\_ap** respectively.

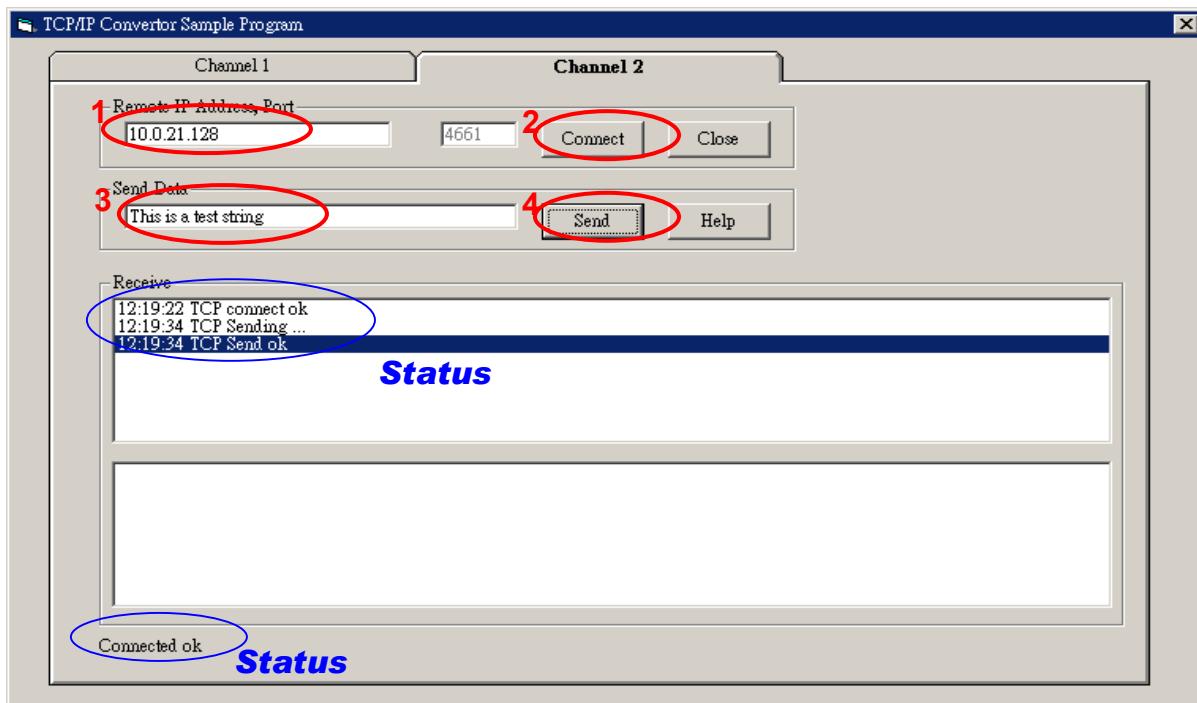
There are two test programs, TCPTEST written in Visual Basic and TCPTEST2 written in Visual C++.

### TCPTEST in Visual Basic

This sample program is written in Visual Basic 5.0 with Winsock Controls. It shows you how to send and receive data between host (PC) and GW51E-MINI via Ethernet in two socket ports.

Run Visual Basic and open sample program tcptest.vbp, after the program is started successfully, you can start testing functions. For more information, please press **Help** in the program to get detail explanation.

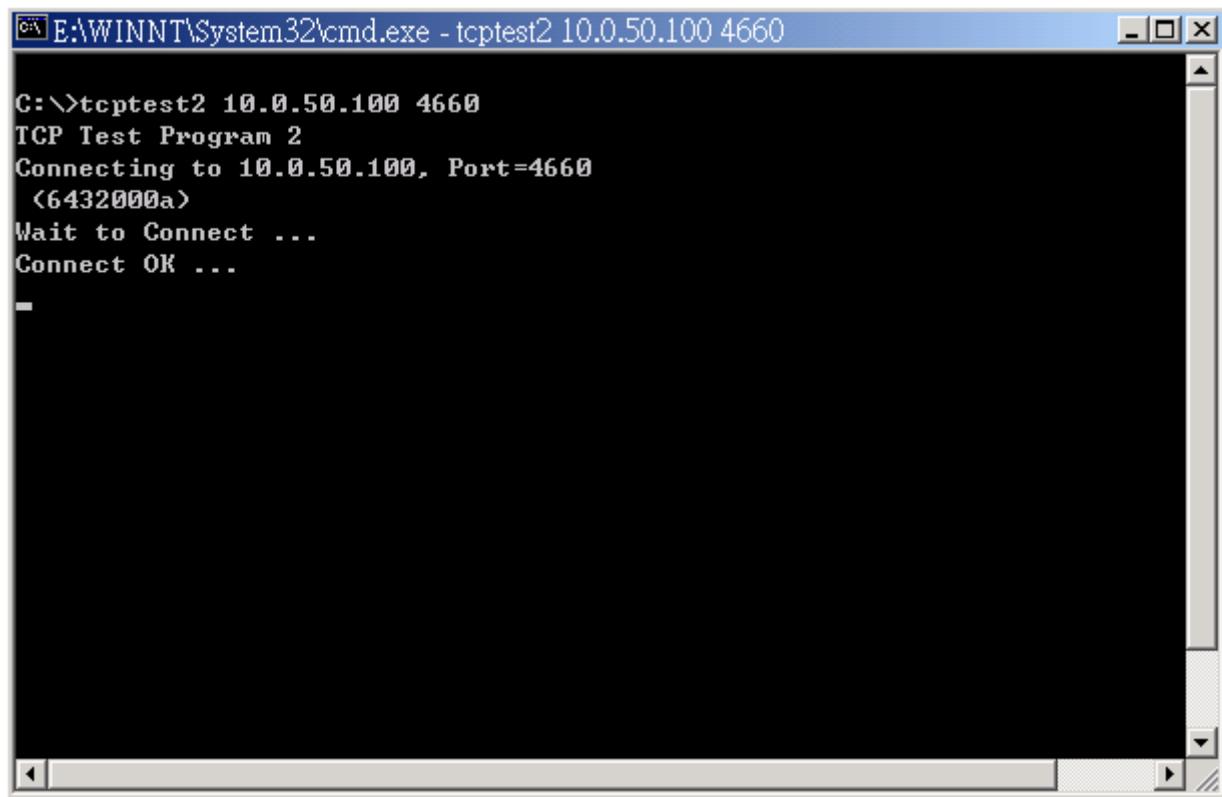
**Note:** Please be sure the Microsoft visual studio family software is installed on the computer. Otherwise the sample program will not run.



### TCPTEST2 in Visual C

To start the program, please type in the following command in the command line prompt:

**TCPTEST2 IP\_Address Port\_Number**



The screenshot shows a Windows Command Prompt window with the title bar "E:\WINNT\System32\cmd.exe - tcptest2 10.0.50.100 4660". The window content displays the following text:

```
C:\>tcptest2 10.0.50.100 4660
TCP Test Program 2
Connecting to 10.0.50.100, Port=4660
<6432000a>
Wait to Connect ...
Connect OK ...
```

The command **tcptest2 10.0.50.100 4660** brings you to connect to a TCP server of IP address **10.0.50.100** and port number **4660**, the received data is displayed on the screen and the data typed in is sent to the TCP server of the designated port number. You can also send binary data in hex format with a leading character “**\**”. For example, “**00**” and “**FF**” represent ASCII code 0 and 255 respectively.

You can also use modem to connect to the serial server. Command "**AT\Od**" sends standard AT command to the modem which in return responds with "**OK\0D\0A**" message to the host application.

Always use '=' then Enter key to exit the program.

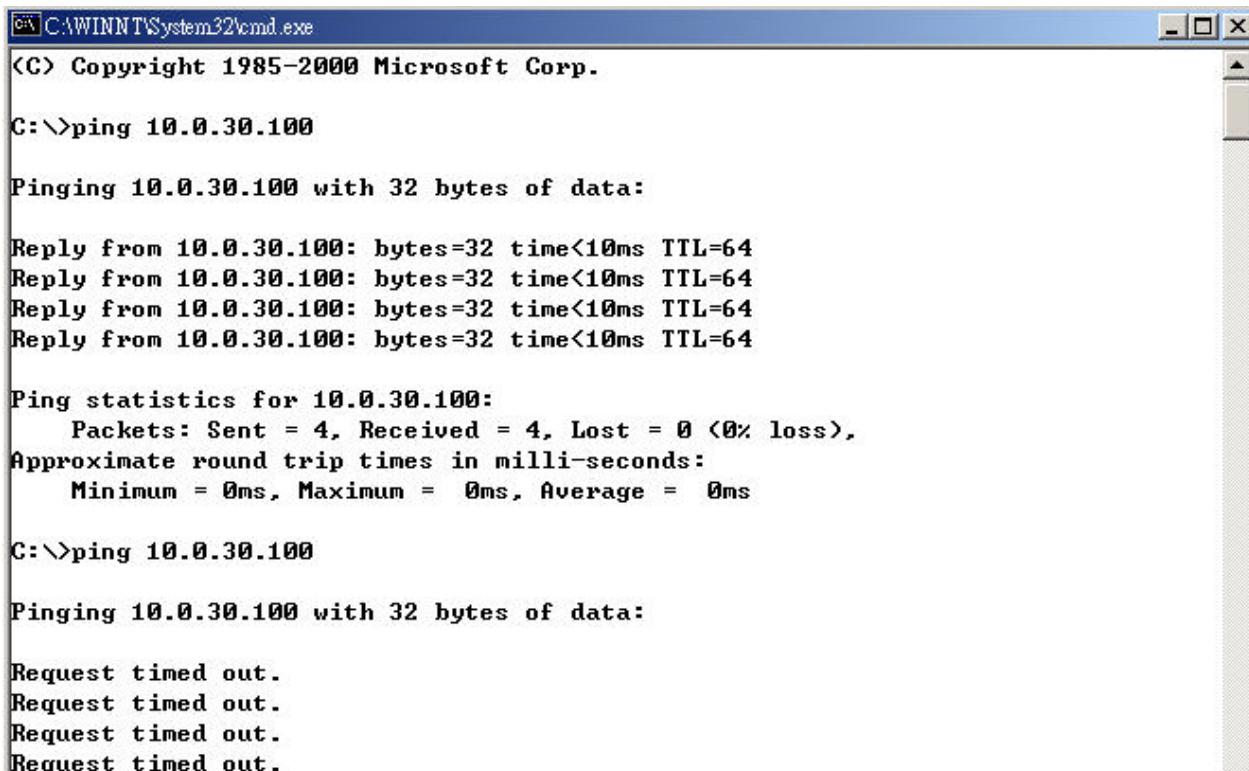
## 5. Diagnostics

There are several ways you can check on the status and availability of GW51E-MINI.

### 5.1 Use Standard TCP/IP Utility *ping* Command

From Windows **Start** menu, select **Run** and type in “**ping <serial Server IP address>**”.

If the connection is established, the Reply messages are displayed, otherwise it will indicate Request timed out.



```
C:\WINNT\System32\cmd.exe
(C) Copyright 1985-2000 Microsoft Corp.

C:\>ping 10.0.30.100

Pinging 10.0.30.100 with 32 bytes of data:

Reply from 10.0.30.100: bytes=32 time<10ms TTL=64

Ping statistics for 10.0.30.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 10.0.30.100

Pinging 10.0.30.100 with 32 bytes of data:

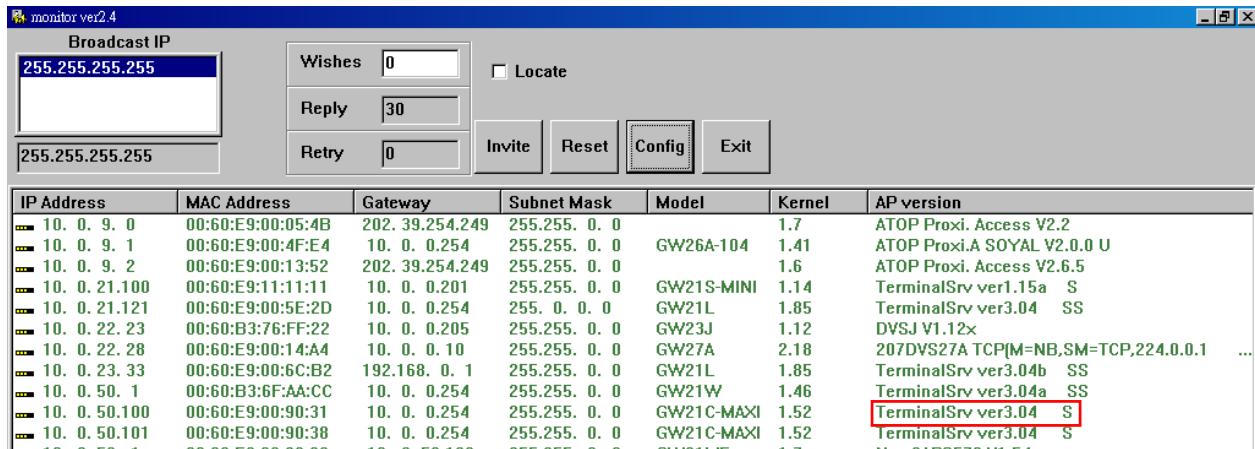
Request timed out.
Request timed out.
Request timed out.
Request timed out.
```

### 5.2 Use monitor.exe Configuration Utility Program

Use monitor.exe configuration program that comes with the product CD or diskette to check on the status of GW51E-MINI. The status can be read from “**AP version**” column of the tool.

Status	Descriptions
S	The system is configured as a TCP Server and not yet connected.
A	The TCP Server and is connected.

For example, 's' means that COM1 is server mode and is not connected.



IP Address	MAC Address	Gateway	Subnet Mask	Model	Kernel	AP version
10. 0. 9. 0	00:60:E9:00:05:4B	202.39.254.249	255.255. 0. 0		1.7	ATOP Proxi. Access V2.2
10. 0. 9. 1	00:60:E9:00:4F:E4	10. 0. 0.254	255.255. 0. 0	GW26A-104	1.41	ATOP Proxi.A SOYAL V2.0.0 U
10. 0. 9. 2	00:60:E9:00:13:52	202.39.254.249	255.255. 0. 0		1.6	ATOP Proxi. Access V2.6.5
10. 0. 21.100	00:60:E9:11:11:11	10. 0. 0.201	255.255. 0. 0	GW21S-MINI	1.14	TerminalSrv ver1.15a S
10. 0. 21.121	00:60:E9:00:5E:2D	10. 0. 0.254	255. 0. 0. 0	GW21L	1.85	TerminalSrv ver3.04 SS
10. 0. 22. 23	00:60:B3:76:FF:22	10. 0. 0.205	255.255. 0. 0	GW23J	1.12	DVSJ V1.12x
10. 0. 22. 28	00:60:E9:00:14:A4	10. 0. 0.10	255.255. 0. 0	GW27A	2.18	207DVS27A TCP(M=NB,SM=TCP,224.0.0.1 ...
10. 0. 23. 33	00:60:E9:00:6C:B2	192.168. 0. 1	255.255. 0. 0	GW21L	1.85	TerminalSrv ver3.04b SS
10. 0. 50. 1	00:60:B3:6F:AA:CC	10. 0. 0.254	255.255. 0. 0	GW21W	1.46	TerminalSrv ver3.04a SS
10. 0. 50.100	00:60:E9:00:90:31	10. 0. 0.254	255.255. 0. 0	GW21C-MAXI	1.52	TerminalSrv ver3.04 S
10. 0. 50.101	00:60:E9:00:90:38	10. 0. 0.254	255.255. 0. 0	GW21C-MAXI	1.52	TerminalSrv ver3.04 S

### 5.3 Use TCPTEST.EXE or TCPTEST2.EXE Sample Program

Use sample programs TCPTEST.EXE and TCPTEST2.EXE that comes with the product CD or diskette to check on the status of GW51E-MINI. Please refer to chapter 4.2 to run the sample programs.

## Appendix A: GW51E-MINI Single Port Serial Server specifications

### A.1 Hardware Specifications

	Specifications
<b>CPU</b>	<ul style="list-style-type: none"><li>• 8-bit Embedded CPU</li><li>• 50MHz</li></ul>
<b>Flash Memory</b>	<ul style="list-style-type: none"><li>• 128K Bytes</li></ul>
<b>SRAM</b>	<ul style="list-style-type: none"><li>• 16K Bytes</li></ul>
<b>EEPROM</b>	<ul style="list-style-type: none"><li>• 512 Bytes</li></ul>
<b>Watch Dog Timer</b>	<ul style="list-style-type: none"><li>• 1.02 second hardware auto reset</li></ul>
<b>Serial Port</b>	<ul style="list-style-type: none"><li>• One serial port</li></ul>
<b>Communication</b>	<p>Connector: DB9 Female cable</p> <p>TxD+, RxD+, RTS-, CTS-, GND</p> <ul style="list-style-type: none"><li>• Parameters</li></ul> <ol style="list-style-type: none"><li>1) Baud-rate: 1200 bps ~ 115000 bps</li><li>2) Parity: None, Even, Odd, Mark, Space</li><li>3) Data bits: 7,8</li><li>4) Stop bits: 1,2</li><li>5) Flow Control: Hardware CTS/RTS, Software Xon/Xoff</li></ol>
	<p>Please note the communication will not be established if parameters are set as:</p> <ol style="list-style-type: none"><li>1.) Parity: None</li><li>2.) Data bits: 7</li><li>3.) Stop bits: 1</li></ol>
<b>Power Requirement</b>	<ul style="list-style-type: none"><li>• 5.0 Vdc , 200mA</li></ul>
<b>Temperature</b>	<ul style="list-style-type: none"><li>• Operation range: 0°C to 60°C</li><li>• Storage range: -20°C to 85°C</li></ul>
<b>Humidity</b>	<ul style="list-style-type: none"><li>• 20%~90% non-condensing</li></ul>
<b>Dimension</b>	<ul style="list-style-type: none"><li>• 40.0mm X 77.6 X 23.0 mm</li></ul>
<b>Material</b>	<ul style="list-style-type: none"><li>• Metal housing</li></ul>

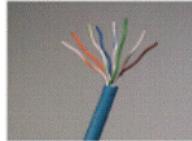
## A.2 Software Specifications

Item	Specifications
<b>Protocol</b>	TCP/IP, HTTP, ICMP, BOOTP
<b>Configuration</b>	<ul style="list-style-type: none"><li>• Configuration information for both TCP/IP and serial ports is kept in the EEPROM.</li><li>• Configuration utilities of Windows 95/98/NT are provided for configuring settings.</li><li>• Ethernet web browser</li><li>• Virtual com driver mode</li></ul>

## Appendix B: GW51E-MINI Connection Pin Assignment

### B.1 Ethernet Port (RJ-45)

1. Category 5 UTP cable, 8 core wire.



2. RJ45 Connector.

3. RJ45 Pin Assignment

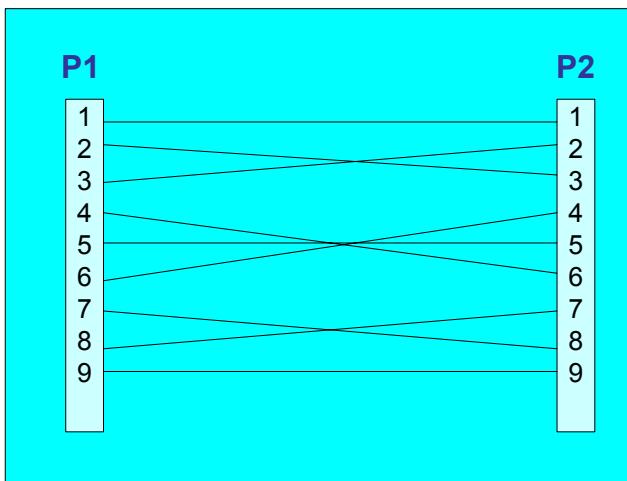
Pin Assignment	568A Definition	568B Definition
Pin1	Green-White	Orange-White
Pin2	Green	Orange
Pin3	Orange-White	Green-White
Pin4	Blue	Blue
Pin5	Blue-White	Blue-White
Pin6	Orange	Green
Pin7	Brown-White	Brown-White
Pin8	Brown	Brown

You can choose either 568A or 568B definition. If you want to make a crossover cable, you should use 568A and 568B definition respectively in each terminal of a UTP cable.

### B.2 RS-232 DB9 Connector Pin Assignment

Pin#	RS-232 Female
	Full Duplex
2	TXD
3	RXD
5	SG (Signal Ground)
7	CTS
8	RTS

### B.3 DB9 Male to male adapter pin out



## Appendix C Configuration Utility

The configuration utility **monitor.exe** comes with the product CD or diskette is the main utility program to demonstrate and configure GW51E-MINI's settings.

### C.1 Run the utility

Start the program under Windows 95/98/NT/2000 environment and the following window appears.

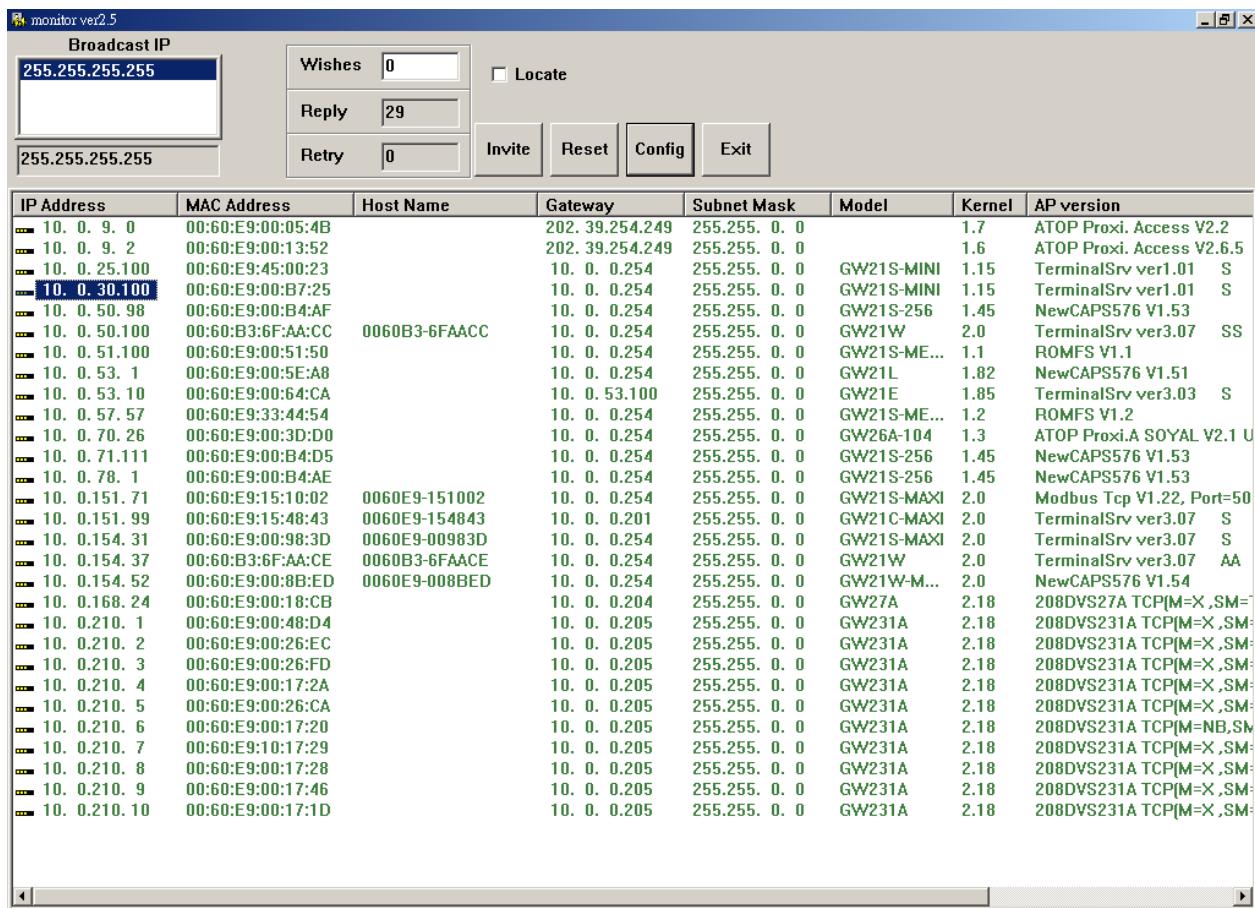


Figure C1. Main window of monitor.exe utility program

### C.2 Detect Operational Devices

You may do the following steps to detect devices currently available on the network.

1. Start **monitor.exe** utility program.
2. Select an item from the **Broadcast IP** list.
3. Specify a number in the **Wishes** box.
4. Click on the **Invite** button. This will display all the devices information you have requested.

## C.3 Configure Devices

You may use **monitor.exe** configuration utility to configure the settings of devices on the network. To do so, please follow the steps below.

1. Repeat the steps in the section of **C.2** to bring up the devices information.
2. Select the device you want to configure from the **IP Address** column, click on the **Config** button, a configuration window will popup as shown in Figure **C2**:

IP Address	MAC Address	Host Name	Gateway	Subnet Mask	Model	Kernel	AP version
10. 0. 9. 0	00:60:E9:00:05:4B		202.39.254.249	255.255. 0. 0		1.7	ATOP Proxi. Access V2.2
10. 0. 9. 2	00:60:E9:00:13:52		202.39.254.249	255.255. 0. 0		1.6	ATOP Proxi. Access V2.6.5
10. 0. 25.100	00:60:E9:45:00:23		10. 0. 0.254	255.255. 0. 0	GW21S-MINI	1.15	TerminalSrv ver1.01 S
<b>10. 0. 30.100</b>	<b>00:60:E9:00:B7:25</b>		10. 0. 0.254	255.255. 0. 0	GW21S-MINI	1.15	TerminalSrv ver1.01 S
10. 0. 50. 98	00:60:E9:00:B4:AF		10. 0. 0.254	255.255. 0. 0	GW21S-256	1.45	NewCAPS576 V1.53
10. 0. 50.100	00:60:B3:6F:AA:CC	0060B3-6FAACC	10. 0. 0.254	255.255. 0. 0	GW21W	2.0	TerminalSrv ver3.07 SS
10. 0. 51.100	00:60:E9:00:51:50		10. 0. 0.254	255.255. 0. 0	GW21S-ME...	1.1	ROMFS V1.1
10. 0. 53. 1	00:60:E9:00:5E:A8		10. 0. 0.254	255.255. 0. 0	GW21L	1.82	NewCAPS576 V1.51
10. 0. 53. 10	00:60:E9:00:64:CA		10. 0. 53.100	255.255. 0. 0	GW21E	1.85	TerminalSrv ver3.03 S
10. 0. 57. 57	00:60:E9:33:44:54		10. 0. 0.254	255.255. 0. 0	GW21S-ME...	1.2	ROMFS V1.2
10. 0. 70. 26	00:60:E9:00:3D:D0		10. 0. 0.254	255.255. 0. 0	GW26A-104	1.3	ATOP Proxi.A SOYAL V2.1 U
10. 0. 71.111	00:60:E9:00:B4:D5		10. 0. 0.254	255.255. 0. 0	GW21S-256	1.45	NewCAPS576 V1.53

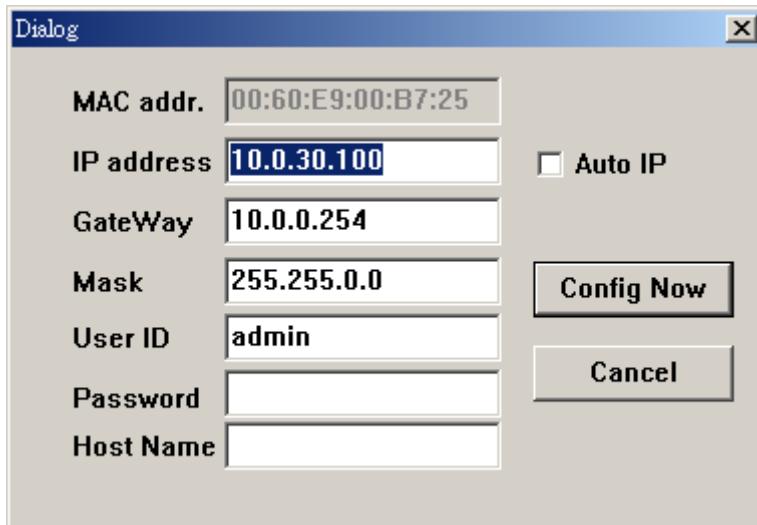


Figure C2. Configuration dialog box

3. After you click the “Configure Now” button, the target device will return an ACK message indicating the modification is successful as shown in the following:



Please note **monitor.exe** version 2.4 and above requires **gw21le.dll** library to function properly.

The following table lists the functional descriptions for all the fields.

Field Name	Field Descriptions
<b>Broadcast IP</b>	Except for the default IP 255.255.255.255, other items (IPs) are read from the file "seg.cfg". This field specifies a detecting IP range. It may be a designated IP or a broadcast IP.
<b>Wishes</b>	Specifies minimum number of the devices you wish to get reply from after sending an <b>Invite</b> request. If there is not as many as devices responding to your invitation, the system repeatedly sends invitation until your request is fulfilled.
<b>Reply</b>	Indicates the actual number of devices this utility program detected.
<b>Retry</b>	Specify the number of times that an Invite request is re-sent.
<b>Locate</b>	Locate the specified device.
<b>Reset</b>	Reset the selected device.
<b>Config</b>	Configure the selected device.
<b>Exit</b>	Exit this utility.
<b>IP Address</b>	Indicate the IP address of the device that replied to your request. <ul style="list-style-type: none"> <li>• Leading tag “!” stands for IP address collision, possibly caused by duplicated IP addresses on the network.</li> <li>• Leading tag “?” stands for Mac address collision, possibly caused by duplicated Mac addresses on the network.</li> </ul>
<b>MAC Address</b>	Indicates the MAC address of responding device.
<b>Gateway</b>	Indicates the IP address of the gateway.
<b>Subnet Mask</b>	Indicates the TCP/IP network mask.
<b>OS</b>	Indicates the OS version of the responding device.
<b>AP Version</b>	Indicates the AP version of the responding device.
<b>Model</b>	Indicates the model number of the responding device. This field is only available for monitor.exe version 2.0 and above.